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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,887	11/26/2003	Robert Mark Stefan Porter	282547US8X	9337

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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MOTSINGER, SEAN T

ART UNIT	PAPER NUMBER
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2624

NOTIFICATION DATE	DELIVERY MODE
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11/21/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary**

Application No.

10/723,887

Applicant(s)

PORTER ET AL.

Examiner

Sean Motsinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/26/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-13 is/are rejected.
- 7) ☒ Claim(s) 2,6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11/26/2003, 5.3.2003
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Rejections Under 35 U.S.C. 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 10-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
2. Re claims 10 This claim is an effort to claim a computer program. However a computer program per se is abstract and is not statutory. The proper way to claim this to comply with 35 U.S.C. 101 is "a computer readable storage medium encoded with a computer program to perform the method according to claim 9."
3. Re claims 11-12 these claims are an effort to claim a computer program provided on a storage medium. However a computer program on just any medium is still abstract and is not statutory. The proper way to claim subject matter to comply with 35 U.S.C. 101 is "a computer readable storage medium encoded with a computer program to perform the method according to claim 9."
4. Re claim 13 this claim is an effort to claim a computer program provided on a transmission medium. This could reasonable be construed to be an electrical signal. Electrical signals are not tangible; articles of manufacture should be tangible.

***Rejections Under 35 U.S.C. 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,3,4, 5, 9 rejected under 35 U.S.C. 102(b) as being anticipated by “Face detection in a video sequence - a temporal approach” Mikolajczyk, K.; Choudhury, R.; Schmid, C.; Computer Vision and Pattern Recognition, 2001. CVPR 2001. Proceedings of the 2001 IEEE Computer Society Conference on Volume 2, 2001 Page(s):II-96 - II-101 vol.2.
6. Re claim 1 Mikolajczyk discloses a face detection apparatus generating an output indicative of the likelihood of test regions of a test image containing a face, the apparatus comprising: (i) logic to derive a plurality of sets of image attribute (visual attributes section 3.2) paragraph 1) data from a test region, each set relating to said test region scaled by a respective different scaling factor (different scales section 3.2 paragraph 1) from a geometric progression of scaling factors (1.2 note there is a progression of each scaled by a factor of 1.2 section 3.2 paragraph 1) said

progression being such that each scaling factor is related to a next scaling factor by a predetermined multiplicative factor ( factor of 1.2 section 3.2 paragraph 1), said factor being the same across the whole progression of scaling factors (section 3.2 paragraph 1 note the factor is always 1.2); (ii) a first comparator (frontal detector section 3.2 paragraph 1) to compare said derived attributes (visual attributes section 3.2 paragraph 1) for each scaling factor (different scale section 3.2 paragraph 1) with a first respective set of attributes indicative of the presence of a face (frontal face model section 3.3 first paragraph) to generate a first respective likelihood value( $P_f(I,x,y,s)$  section 3.2 paragraph 1); (iii) a second comparator (profile detector section 3.2 paragraph 1) to compare said derived attributes for each scaling factor (different scale section 3.2 paragraph 1) with a second respective set of attributes indicative of the presence of a face (profile face model section 3.3 first paragraph) to generate a second respective likelihood value ( $P_p(I,x,y,s)$  section 3.2 paragraph 1); (iv) a generator to generate a combined likelihood value ( $P(I,x,y,s)$  section 4.1 paragraph 3) in respect of at least a subset of said scaling factors (note it is done for different scaling factors  $s$ ) by combining ( section 4.1 step I) the first likelihood value ( $P_f(I,x,y,s)$ ) applicable to that scaling factor ( $s$ ) with the second likelihood ( $P_p(I,x,y,s)$ ) value applicable to a further scaling factor ( $s$ ) separated from that scaling factor in the geometric progression by a predetermined number of positions (Note these are applied at the same scaling factor so it is separated by a predetermined number of positions which is zero) ; and (v)\_logic to derive a probability (section 4.1 paragraph 3) of the presence of a face at each scaling factor in the subset by a similarity

between said derived attributes (visual attributes) and said combined likelihood value ( $P(I,x,y,s)$ ) in respect of that scaling factor.

7. Re claim 3 Mikolajczyk further discloses the apparatus arranged to derive a combined likelihood value which, across said progression of scaling factors (over scales Section 3.2 paragraph 2), is indicative of the highest likelihood of a face being present in that test region.
8. Re claim 4 Mikolajczyk further discloses said apparatus being operable to compare likelihood values across a plurality of different test regions (image locations section 3.2 paragraph 2) to detect likelihood value which, across said progression of scaling factors (over scales Section 3.2 paragraph 2) and across said plurality of test regions image locations section 3.2 paragraph 2), is indicative of the highest likelihood (maxima section 3.2 paragraph 2) of a face being present.
9. Re claim 5 Mikolajczyk further discloses in which the predetermined multiplicative factor is the fourth root of two (1.2 section 3.2 paragraph 2 note fourth root of two is approximately 1.2).
10. Re claim 9 Mikolajczyk discloses a method of face detection for generating an output indicative of the likelihood of test regions of a test image containing a face, the method comprising the steps of: (i) deriving a plurality of sets of image attribute

(visual attributes section 3.2) paragraph 1) data from a test region, each set relating to said test region scaled by a respective different scaling factor (different scales section 3.2 paragraph 1) from a geometric progression of scaling factors (1.2 note there is a progression of each scaled by a factor of 1.2 section 3.2 paragraph 1) said progression being such that each scaling factor is related to a next scaling factor by a predetermined multiplicative factor ( factor of 1.2 section 3.2 paragraph 1), said factor being the same across the whole progression of scaling factors (section 3.2 paragraph 1 note the factor is always 1.2); (ii) comparing said derived attributes (visual attributes section 3.2 paragraph 1) for each scaling factor (different scale section 3.2 paragraph 1) with a first respective set of attributes indicative of the presence of a face (frontal face model section 3.3 first paragraph) to generate a first respective likelihood value( $P_f(I,x,y,s)$  section 3.2 paragraph 1); (iii) comparing said derived attributes for each scaling factor (different scale section 3.2 paragraph 1) with a second respective set of attributes indicative of the presence of a face (profile face model section 3.3 first paragraph) to generate a second respective likelihood value ( $P_p(I,x,y,s)$  section 3.2 paragraph 1); (iv) generating a combined likelihood value ( $P(I,x,y,s)$  section 4.1 paragraph 3) in respect of at least a subset of said scaling factors (note it is done for different scaling factors  $s$ ) by combining ( section 4.1 step I) the first likelihood value ( $P_f(I,x,y,s)$ ) applicable to that scaling factor ( $s$ ) with the second likelihood ( $P_p(I,x,y,s)$ ) value applicable to a further scaling factor ( $s$ ) separated from that scaling factor in the geometric progression by a predetermined number of positions (Note these are applied at the same scaling factor so it is

separated by a predetermined number of positions which is zero) ; and (v) deriving a probability (section 4.1 paragraph 3) of the presence of a face at each scaling factor in the subset by a similarity between said derived attributes (visual attributes) and said combined likelihood value ( $P(I,x,y,s)$ ) in respect of that scaling factor.

### ***Rejections Under 35 U.S.C. 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7, 8, 10-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Mikolajczyk.
12. Re claim 7 Mikolajczyk discloses the apparatus of claim 1. Mikolajczyk does not disclose employing it in a video conferencing apparatus. However examiner is taking official notice that it is well known to use face detection such as in Mikolajczyk in video conferencing system. The motivation to combine is that Mikolajczyk is designed specifically for video (see title). Therefore it would have been obvious to combine Mikolajczyk with common knowledge in the art to reach the aforementioned advantage.



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13. Re claim 8 Mikolajczyk discloses the apparatus of claim 1. Mikolajczyk does not disclose employing it in a video conferencing apparatus. However examiner is taking official notice that it is well known to use face detection such as in Mikolajczyk in a surveillance system. The motivation to combine is that Mikolajczyk is designed specifically for video (see title). Therefore it would have been obvious to combine Mikolajczyk with common knowledge in the art to reach the aforementioned advantage.
14. Re claim 10 Mikolajczyk discloses the method of claim 9. It does not specifically disclose carrying out his method in software however examiner is taking official notice that it is well known to implement such a method in software for the obvious advantage of speed. Therefore it would have been obvious to combine Mikolajczyk with common knowledge in the art to reach the aforementioned advantage.
15. Re claim 11 Mikolajczyk and common knowledge disclose the software of claim 10. Mikolajczyk does not disclose a medium for providing the program, however examiner is taking official notice that it is well known to provide such programs on a providing medium for the obvious advantage of providing the program to a new computer. Therefore it would have been obvious to combine Mikolajczyk with common knowledge in the art to reach the aforementioned advantage.

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16. Re claim 12 Mikolajczyk and common knowledge disclose the medium of claim

10. Mikolajczyk does not disclose where in the medium is a storage medium however examiner is taking official notice that it is well known to provide such programs on a CD for the obvious advantage of providing the program to a new computer. Therefore it would have been obvious to combine Mikolajczyk with common knowledge in the art to reach the aforementioned advantage.

17. Re claim 13 Mikolajczyk and common knowledge disclose the medium of claim

10. Mikolajczyk does not disclose where in the medium is a transmission medium however examiner is taking official notice that it is well known to provide such programs on transmission medium for the obvious advantage of providing the program in-between networked computers. Therefore it would have been obvious to combine Mikolajczyk with common knowledge in the art to reach the aforementioned advantage.

***Allowable Subject Matter***

18. Claims 2 and 6 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 2 contains allowable subject matter because element (ii) is not found in the prior art of record. Claim 6 contains allowable subject matter because a further scaling factor separated from that scaling

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factor in said geometric progression by three positions is not found in the prior art of record.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Motsinger whose telephone number is 571-270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Motsinger  
4/13/2007

  
JINGGE WU  
SUPERVISORY PATENT EXAMINER